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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,470	03/30/2001	Kenji Yamagami	36992.00073 (HAL 170)	5742

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SQUIRE, SANDERS & DEMPSEY L.L.P  
600 HANSEN WAY  
PALO ALTO, CA 94304-1043

EXAMINER

SIDDIQI, MOHAMMAD A

ART UNIT	PAPER NUMBER
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2154

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/823,470	<b>Applicant(s)</b> YAMAGAMI, KENJI	
	<b>Examiner</b> Mohammad A Siddiqi	<b>Art Unit</b> 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/18/2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-20 are presented for examination.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 10-13 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Yannai et al. (6,173,377) (hereinafter Yannai).
4. As per claim 10, Yannai discloses, a method for minimizing cost (col 6, lines 9-11) of network access by a storage apparatus, said method comprising:  
  
storing data in a primary storage volume (data must be stored to fully synchronized, col 3, lines 32-34);

specifying a first network to be used for transferring remote mirror copy (col 2, lines 40) data from the primary storage volume to a secondary storage volume (14,46,fig 1,col 2, lines 32-46 and col 6, lines);

specifying a constraint for said first network (col 46, lines 35-40);

specifying a second network to be used for transferring the remote mirror copy data from the primary storage volume (data must be stored to fully synchronized, col 3, lines 32-34) to the secondary storage volume (col 2, lines 31-59 and col 8, lines 31-40); and

transferring said remote mirror (col 2, lines 40) copy data using said first network when conditions in said first network are in accordance with said constraint (col 46, lines 35-40 and col 17, lines 29-36), otherwise transferring said remote mirror copy data using said second network (col 17, lines 29-36).

5. As per claim 11, Yannai discloses, transferring a portion of said data using said first network even when conditions in said first network are not in accordance with said constraint as a test (col 17, lines 29-55 and col 46, lines 35-40);

monitoring conditions in said first network during said test (col 17, lines 29-55 and col 10, lines 25-35); and

returning to transferring said remote mirror copy data using said first network when said test reveals that conditions in said first network are again in accordance with said constraint (testing and recovery procedure, col 56, lines 18-30).

6. As per claim 12, Yannai discloses wherein said first network is relatively less expensive to use than said second network (col 6, lines 9-11).

7. As per claim 13, Yannai discloses wherein specifying said constraint for said first network comprises specifying at least one of a throughput, a busy rate, an error rate, and a presence of an error (testing recovery procedures, elements fig 13 A, col 56, lines 17-39 and col 54, 57).

8. As per claim 16, Yannai discloses further comprising: detecting an abnormal condition in said first network and thereupon transferring data using said second network (col 17, lines 29-36, remote data storage system).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yannai et al. (6,173,377) (hereinafter Yannai) in view of Schwerging et al. (6,717,943) (hereinafter Schwerging).

11. As per claim 14, Yannai does not disclose first network is a public network and said second network is a private network. However Schwerging discloses first network is a public network and said second network is a private network (col 6, lines 36-50). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Yannai and Schwerging. The motivation would have been providing data transfer capability between an environment internal to the system and an external to system.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yannai et al. (6,173,377) (hereinafter Yannai) in view of Majd et al. (6,680,948) (hereinafter Majd).

13. As per claim 15, Yannai does not disclose making said first network a higher priority network than said second network. However, Majd disclose making said first network a higher priority network than said second network (col 2, lines 45-55). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Yannai and Majd. The motivation would have been prioritizing priorities of data transfer on different networks.

14. Claims 1-9 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beardsley et al. (5,680,580) (hereinafter Beardsley) in view of Yannai et al. (6,173,377) (hereinafter Yannai).

15. As per claim 1, Beardsley discloses storage system apparatus, comprising:

a processor (col 6, lines 6-9);

wherein said processor selects at least one of said plurality of ports to send data from the first storage system to the second storage system, said connection based upon a comparison of at least one condition in said

plurality of networks against at least one user provided policy (role, col 10, lines 48-57, col 12, lines 30-40).

a plurality of ports, providing switch-able connection from said first storage system to said second storage system (fig 1-3, col 4, lines 54-67, col 5, lines 1-15, col 6, lines 22-64);

Beardsley does not specifically disclose a first storage system for storing data and second storage system for storing a remote mirror copy of the data, plurality of network. However, Yannai discloses a first storage system for storing data and second storage system for storing a remote mirror copy of the data (data must be stored to fully synchronized, col 3, lines 32-34); Plurality of networks (col 8, lines 30-40), a user provided policy (use-configurable, col 20, lines 25-30, col 12, lines -67, can be configured and monitored by the user). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Beardsley and Yannai. The motivation would have been to provide a remote data storage system with load balancing while distributing large data file on a multiple disk drives.

16. As per claim 17, The claim is rejected for the same reasons as claim 1, above.



17. As per claim 2, Beardsley discloses wherein said at least one condition comprises at least one of a throughput, a busy rate, an error rate, and a presence of an error (abstract, col 12, lines 30-40).

18. As per claims 3 and 18, claims are rejected from the same reasons as claim 1, above. In addition, Beardsley discloses further comprising a plurality of status indications, said plurality of cluster each having at least one of said plurality of status indications associated therewith (fig 5,col 8, lines 52-63); and wherein said processor determines based upon said status indication whether to select a port from said plurality of ports (fig 1-3, col 4, lines 54-67, col 5, lines 1-15, col 6, lines 22-64).

19. As per claims 4 and 20, claims are rejected from the same reasons as claim 1, above. In addition, Beardsley discloses further comprising a network monitor, said network monitor operable to detect a condition within at least one of said plurality of clusters, and thereupon set said status indication (fig 1-5, col 4, lines 54-67, col 5, lines 1-15, col 6, lines 22-64).

20. As per claim 5, Beardsley discloses wherein said status indication comprises at least one of available, temporarily unavailable, and unavailable (fig 5, col 12, lines 30-40).

21. As per claim 6, claim is rejected from the same reasons as claim 1, above. In addition, Yannai discloses policy comprises at least one of a threshold, a maximum, a minimum, an average, a mean, a limit, a constraint, a priority, and a target (col 52 and col 12, lines -67, can be configured and monitored by the user).

22. As per claims 7 and 19, claims are rejected from the same reasons as claims 1 and 6, above. In addition, Beardsley wherein said plurality of networks are grouped into a plurality of path groups, wherein said role are associated with clusters in a particular path group (fig 1-3, col 4, lines 54-67, col 5, lines 1-15, col 6, lines 22-64).

23. As per claim 8, claim is rejected from the same reasons as claim 1, above. In addition, Yannai discloses first storage and said second storage system comprises of a plurality of volumes (, col 3, lines 32-34 and col 2, lines 32-46).

24. As per claim 9, claim is rejected from the same reasons as claim 1, above. In addition, Beardsley, wherein each of said plurality of volumes is permitted to access networks of at least one of said plurality of path groups

(fig 1-6, col 4, lines 54-67, col 5, lines 1-15, col 6, lines 22-64, col 10, lines 27-47).

### ***Response to Arguments***

25. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 6,553,401 teaches sharing data storage in cluster environment.

U.S. Patent 6,324,654 teaches remote data mirroring system.

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad A Siddiqi whose telephone number is (571) 272-3976. The examiner can normally be reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAS

 JOHN FOLLANSBEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100